

AMENDED IN SENATE APRIL 17, 2006

AMENDED IN SENATE MARCH 28, 2006

**SENATE BILL**

**No. 1505**

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**Introduced by Senator Lowenthal**

(~~Coauthor: Assembly Member Pavley~~ *Coauthors: Assembly Members  
Lieu and Pavley*)

February 23, 2006

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An act to add Sections 43868 and 43869 to the Health and Safety Code, relating to fuel.

LEGISLATIVE COUNSEL'S DIGEST

SB 1505, as amended, Lowenthal. Fuel: hydrogen alternative fuel.

Existing law imposes various limitations on emissions of air contaminants for the control of air pollution from vehicular and nonvehicular sources. Existing law generally designates the State Air Resources Board as the state agency with the primary responsibility for the control of vehicular air pollution. Under existing law, the state board, in conjunction with other state agencies, is required to develop and adopt a state plan to increase the use of alternative fuels, as defined. Existing law also requires retail sellers, as defined, to procure a specified percentage of electricity generated by eligible renewable energy resources, as defined, called a renewables portfolio standard.

This bill would declare the Legislature's intent that, when the California Hydrogen Highway Blueprint Plan, is implemented, it be done so in a clean and environmentally responsible and advantageous manner. The bill would require the state board to adopt regulations that will ensure that state funding for the production and use of hydrogen fuel, as described in the California Hydrogen Highway Blueprint Plan, contributes to the reduction of greenhouse gas

~~emissions, criteria air pollutants pollutant, and toxic air contaminants contaminant emissions, as specified. The regulations would be required to include, among other requirements, measures to ensure that greenhouse well-to-wheel emissions, as defined, from average hydrogen-based vehicles, fueled by hydrogen from fueling stations that receive state funds, are at least 30% lower than emissions from the average new gasoline vehicle in California when measured on a per-mile basis. The bill would require the state board to adopt regulations to ensure that, on a statewide basis, no less than 33.3% of the hydrogen produced for, or dispensed by, fueling stations that receive state funds be made from eligible renewable sources, and that the renewable sources of electricity used to produce this hydrogen fuel not be counted towards meeting the renewables portfolio standard.~~

~~The bill would also require the state board to adopt further regulations that are to apply in any year immediately following a 12 month period in which the volume of hydrogen produced or fuel dispensed in California for transportation purposes exceeds 500,000 kilograms, to ensure that the production and use of hydrogen fuels for motor vehicles in the state, including, but not limited to, any hydrogen highway network that is developed pursuant to the state's California Hydrogen Highway Blueprint Plan, contribute to a reduced dependence on petroleum, as well as reductions in greenhouse gas emissions, criteria air pollutant emissions, and toxic air contaminant emissions, as specified. The bill would authorize the state board to increase the 500,000 kilogram threshold, as specified. reduced emissions as described above, except that no more than  $\frac{1}{2}$  of the renewable sources of electricity used to produce hydrogen fuel could be counted toward meeting the state's renewables portfolio standard. The bill would also require the board to review the renewable source and emission requirements of the bill every 3 years and make them more stringent when feasible and when that would not substantially hinder the development of the state's clean hydrogen economy. The bill also requires the state board to create a handbook on how the relevant parties can comply with all these requirements. Finally, the bill requires The bill would require the California Environmental Protection Agency's Environmental Justice Advisory Committee to meet to discuss the production and distribution of hydrogen fuel in the state, and require the agency secretary, in consultation with the state board, to recommend to the Legislature and the Governor incentives that could be offered to businesses and consumers within the hydrogen~~

*fuel industry to spur the development of clean sources of hydrogen fuel.*

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1 SECTION 1. The Legislature finds and declares all of the  
2 following:

3 (a) A network of hydrogen production and distribution  
4 facilities for fueling vehicles is developing in California.

5 (b) The California Environmental Protection Agency has  
6 produced the California Hydrogen Highway Blueprint Plan as  
7 part of the state's efforts to diversify its sources of transportation  
8 fuels available to California motorists by expanding the network  
9 of hydrogen fueling stations and availability of  
10 hydrogen-powered vehicles in the state.

11 (c) The California Hydrogen Highway Blueprint Plan  
12 establishes initial goals for the greenhouse gas emissions and  
13 renewable energy content of hydrogen produced for use in the  
14 hydrogen highway network.

15 (d) The production of hydrogen fuels for use in vehicles, when  
16 made from renewable sources of energy, emits virtually zero net  
17 greenhouse gases into the atmosphere.

18 (e) The use of hydrogen fuel in motor vehicles can reduce or,  
19 when used in a fuel cell vehicle, virtually eliminate tailpipe  
20 emissions of criteria pollutants.

21 (f) Hydrogen fueling stations can reduce ~~local~~ *onsite*  
22 *evaporative* emissions when compared with today's gasoline  
23 fueling stations.

24 (g) The widespread use of hydrogen fuels in transportation can  
25 reduce California's dependence on petroleum-based fuels, and  
26 help enhance our nation's energy security.

27 (h) Moving toward a hydrogen-based economy with an  
28 emphasis on hydrogen fuel production from clean, renewable  
29 sources could create thousands of new clean *manufacturing and*  
30 *technology* jobs for California residents.

31 (i) Natural gas, while still an emitter of heat-trapping  
32 greenhouse gases, is cleaner than other fossil fuels, and therefore

1 is an important part of a transitional strategy to a clean hydrogen  
2 fuel economy.

3 (j) A hydrogen highway network in the state should produce  
4 hydrogen fuel from clean, renewable sources and reduce  
5 greenhouse gases and other pollutants compared to  
6 petroleum-based fuels.

7 (k) Hydrogen ~~fuels~~ *fuel and fuel cell vehicles* are a central part  
8 of achieving the state's Zero Emission Vehicle Program.

9 (l) According to the California Hydrogen Highway Blueprint  
10 Plan, the absence of specific goals for reducing emissions and  
11 using renewable resources to produce hydrogen fuel might  
12 actually increase greenhouse gas and particulate matter emissions  
13 relative to petroleum fueled vehicles.

14 SEC. 2. Section 43868 is added to the Health and Safety  
15 Code, to read:

16 43868. (a) It is the intent of the Legislature that, when the  
17 California Hydrogen Highway Blueprint Plan is implemented, it  
18 be done so in a clean and environmentally responsible and  
19 advantageous manner.

20 (b) It is further the intent of the Legislature that the state board  
21 work with other relevant state agencies to ~~promote the production~~  
22 ~~of hydrogen~~ *increase the production of hydrogen, with an*  
23 *emphasis on hydrogen produced from renewable resources*, as  
24 part of a strategy to reduce the state's dependence on petroleum,  
25 achieve the state's greenhouse gas emission reduction targets,  
26 and improve air quality for the state's residents.

27 (c) It is further the intent of the Legislature that the California  
28 Environmental Protection Agency and the state board, as part of  
29 the implementation of the *California* Hydrogen Highway  
30 Blueprint Plan, include in their priorities the deployment of  
31 hydrogen ~~fuel-cell~~ *fuelled* transit buses.

32 SEC. 3. Section 43869 is added to the Health and Safety  
33 Code, to read:

34 43869. The state board shall, no later than July 1, 2007,  
35 develop and, after at least two public workshops, adopt  
36 regulations to ensure the following:

37 (a) That state funding for the production and use of hydrogen  
38 fuel, as described in the California Hydrogen Highway Blueprint  
39 Plan, ~~contribute~~ *contributes* to the reduction of greenhouse gas  
40 emissions, criteria air pollutant emissions, and toxic air

1 contaminant emissions. The regulations shall, at a minimum, do  
2 all of the following:

3 (1) Require that well-to-wheel emissions of greenhouse gases  
4 for the average hydrogen powered vehicle fueled by hydrogen  
5 from fueling stations that receive state funds are at least 30  
6 percent lower than emissions for the average new gasoline  
7 vehicle in California when measured on a per-mile basis.

8 (2) Require that, on a statewide basis, no less than 33.3 percent  
9 of the hydrogen produced for, or dispensed by, fueling stations  
10 that receive state funds be made from eligible renewable energy  
11 resources as defined in subdivision (a) of Section 399.12 of the  
12 Public Utilities Code.

13 ~~(3) Prohibit the specific renewable sources of electricity used~~  
14 ~~to produce hydrogen fuel pursuant to paragraph (2) from being~~  
15 ~~counted toward meeting the state's renewables portfolio standard~~  
16 ~~as required by Article 16 (commencing with Section 399.11) of~~  
17 ~~the Public Utilities Code: hydrogen fuel producers from counting~~  
18 ~~as a renewable energy resource, pursuant to paragraph (2), any~~  
19 ~~electricity produced from sources previously procured by a retail~~  
20 ~~seller and verifiably counted by the retail seller towards meeting~~  
21 ~~the renewables portfolio standard obligation, as required by~~  
22 ~~Article 16 (commencing with Section 399.11) of the Public~~  
23 ~~Utilities Code.~~

24 (4) Require that all hydrogen fuel dispensed from fueling  
25 stations that receive state funds be generated in a manner so that  
26 local well-to-tank emissions of nitrogen oxides plus reactive  
27 organic gases are at least 50 percent lower than well-to-tank  
28 emissions of the average motor gasoline sold in California when  
29 measured on an energy equivalent basis.

30 (5) Require that well-to-tank emissions of relevant toxic air  
31 contaminants for hydrogen fuel dispensed from fueling stations  
32 that receive state funds be reduced to the maximum extent  
33 feasible *at each site* when compared to well-to-tank emissions of  
34 toxic air contaminants of the average motor gasoline fuel on an  
35 energy-equivalent basis. *In no case shall the toxic emissions be*  
36 *greater than the emissions from gasoline on an energy equivalent*  
37 *basis.*

38 (6) Require that providers of hydrogen fuel for transportation  
39 in the state report to the state board the annual volume of

1 hydrogen fuel dispensed and the method by which the dispensed  
2 hydrogen was produced.

3 (b) The regulations shall also require that, in any year  
4 *immediately following a 12 month period* in which the volume of  
5 hydrogen ~~produced or~~ fuel dispensed for transportation purposes  
6 in California exceeds 500,000 kilograms, the production and use  
7 of hydrogen fuels for motor vehicles in the state, including, but  
8 not limited to, any hydrogen highway network that is developed  
9 pursuant to the California Hydrogen Highway Blueprint Plan,  
10 shall contribute to a reduced dependence on petroleum, as well as  
11 reductions in greenhouse gas emissions, criteria air pollutant  
12 emissions, and toxic air contaminant emissions. For the purpose  
13 of this subdivision, the regulations shall, at a minimum, do all of  
14 the following:

15 (1) Require that well-to-wheel emissions of greenhouse gases  
16 for the average hydrogen powered vehicle in California are at  
17 least 30 percent lower than emissions for the average new  
18 gasoline vehicle in California when measured on a per-mile  
19 basis.

20 (2) Require that, on a statewide basis, no less than 33.3 percent  
21 of the hydrogen produced or dispensed in California for motor  
22 vehicles be made from eligible renewable energy resources as  
23 defined in subdivision (a) of Section 399.12 of the Public  
24 Resources Code.

25 ~~(3) Allow no more than one-half of the specific renewable~~  
26 ~~sources of electricity used to produce hydrogen fuel pursuant to~~  
27 ~~paragraph (2) to be counted toward meeting the state's renewable~~  
28 ~~portfolio standard as required by Article 16 (commencing with~~  
29 ~~Section 399.11) of the Public Utilities Code.~~ *hydrogen fuel*  
30 *producers to count as a renewable energy resource, pursuant to*  
31 *paragraph (2), no more than one-half of the renewable sources*  
32 *of electricity used to produce hydrogen fuel that were previously*  
33 *procured by a retail seller and verifiably counted towards*  
34 *meeting the renewables portfolio standard obligation, as*  
35 *required by Article 16 (commencing with Section 399.11) of the*  
36 *Public Utilities Code.*

37 (4) Require that all hydrogen fuel dispensed in California for  
38 motor vehicles be generated in a manner so that local  
39 well-to-tank emissions of nitrogen oxides plus reactive organic  
40 gases are at least 50 percent lower than well-to-tank emissions of

1 the average motor gasoline sold in California when measured on  
2 an energy equivalent basis.

3 (5) Require that well-to-tank emissions of relevant toxic air  
4 contaminants from hydrogen fuel produced or dispensed in  
5 California be reduced to the maximum extent feasible at each site  
6 when compared to well-to-tank emissions of toxic air  
7 contaminants of the average motor gasoline fuel on an  
8 energy-equivalent basis. In no case shall the toxic emissions from  
9 hydrogen fuel be ~~more~~ greater than the toxic emissions from  
10 gasoline on an energy-equivalent basis.

11 (c) *Notwithstanding subdivision (b), the state board may*  
12 *increase the 500,000 kilogram threshold in subdivision (b) by no*  
13 *more than 200,000 kilograms if either of the following*  
14 *requirements are met:*

15 (1) *The 500,000 kilogram threshold is first met prior to*  
16 *January 1, 2009.*

17 (2) *The state board determines that the 500,000 kilogram*  
18 *threshold has been met primarily due to hydrogen fuel consumed*  
19 *in heavy duty vehicles.*

20 (e)

21 (d) The state board, in consultation with other relevant  
22 agencies as appropriate, shall review the renewable resource  
23 requirements adopted pursuant to paragraphs (2) and (3) of  
24 subdivision (a) and paragraphs (2) and (3) of subdivision (b)  
25 every three years and shall increase the *renewable resource*  
26 *percentage* requirements if it determines that it is technologically  
27 feasible to do so and will not substantially hinder the  
28 development of the state's clean hydrogen economy.

29 (d)

30 (e) The state board shall review the emission requirements  
31 adopted pursuant to paragraphs (1), (4), and (5) of subdivision (a)  
32 and paragraphs (1), (4), and (5) of subdivision (b) every three  
33 years and shall strengthen the requirements if it determines it is  
34 technologically feasible to do so and will not substantially hinder  
35 the development of the state's clean hydrogen economy.

36 (e)

37 (f) The state board shall produce and periodically update a  
38 handbook to inform and educate motor vehicle manufacturers,  
39 hydrogen fuel producers, hydrogen service station operators, and  
40 other interested parties on how to comply with the requirements

1 set forth in this section. This handbook shall be made available  
2 on the agency's *Internet* Web site.

3 ~~(f)~~

4 (g) The Secretary for Environmental Protection shall convene  
5 the California Environmental Protection Agency's,  
6 Environmental Justice Advisory Committee at least twice  
7 annually to solicit the committee's comments on the production  
8 and distribution of hydrogen fuel in the state.

9 *(h) The Secretary for Environmental Protection, in*  
10 *consultation with the state board, shall recommend to the*  
11 *Legislature and the Governor incentives that could be offered to*  
12 *businesses and consumers within the hydrogen fuel industry to*  
13 *spur the development of clean sources of hydrogen fuel.*

14 ~~(g)~~

15 (i) As used in this section, "well-to-tank emissions" means  
16 emissions resulting from production of a fuel, to and including its  
17 transportation into the fuel tank of a consumer vehicle, and  
18 "well-to-wheel emissions" means emissions resulting from  
19 production of a fuel, to and including its consumption in a  
20 vehicle.